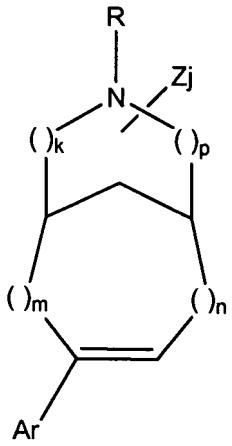
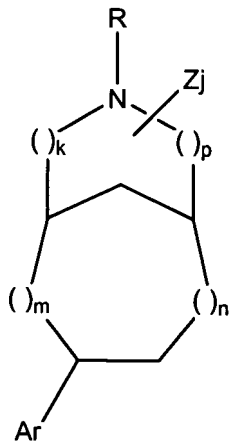
In the Claims:

This listing of claims will replace all prior versions, and listings of claims in the application.

1. (Original claim) A compound of the general formulas:



Formula 1



Formula 2

wherein k and p are each 1, m~~,~~ and n~~, and p~~ are individually 0 or 1 ~~0, 1, 2, or 3~~, provided that~~, when k + p = 1, m or n or both must be greater than 0;~~ if m is 1, then n is 0, and if n is 1, then m is 0;

Ar is ~~a monocyclic or polycyclic heteroaryl ring~~ pyridine, optionally substituted at any position with a substituent Z as defined below, ~~with the proviso that in the compounds of Formula 2, when the azabicyclic ring is a 6-azabicyclo[3.2.1]octane, Ar is not pyridine;~~

wherein Zj refers to j number of Z substituents, which substituents can be present at any carbon atom on the azabicyclic ring,

j is 0, 1, or 2,

each Z is, individually, a substituent species selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl (including heteroaryl), substituted aryl (including heteroaryl), alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo ~~(e.g., F, Cl, Br, or I)~~, -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, -C(=O)NR'R", -NR'C(=O) R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC(=O)R'$, $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl (e.g., straight chain or branched alkyl including C_1-C_8, preferably C_1-C_5, such as methyl, ethyl, or isopropyl), cycloalkyl, heterocyclyl, aryl, or arylalkyl (such as benzyl), and r is an integer from 1 to 6,

R' and R" can combine to form a cyclic functionality,

the term "substituted" as applied to alkyl, aryl (including heteroaryl), cycloalkyl and the like refers to the substituents described above, starting with halo and ending with $-NR'SO_2R"$;

R is hydrogen, lower alkyl, arylalkyl ~~(including heteroarylalkyl)~~, acyl, alkoxycarbonyl or aryloxycarbonyl,

and the compounds can exist as individual stereoisomers or as mixtures of stereoisomers.

Claims 2 and 3. (Cancelled)

4. (Original) The compound of Claim 1, wherein Ar is 3-pyridinyl.

Claims 5-10. (Cancelled) The compound of Claim 1, wherein Ar is 5-pyrimidinyl.

11. (Original) The compound of Claim 1 wherein j is 0 or 1.

12. (Original) The compound of Claim 1 wherein j is 0.

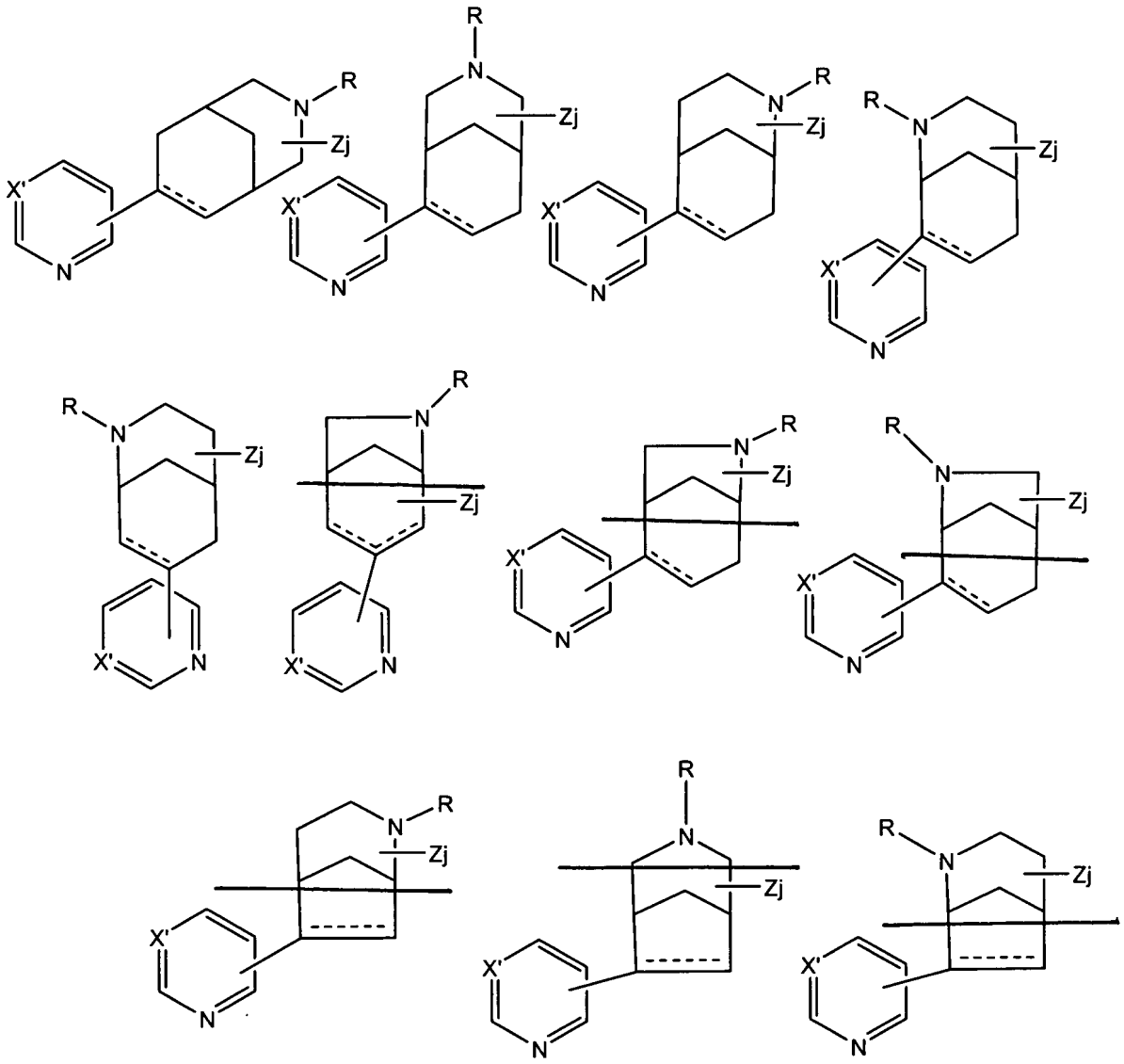
13. (Original) The compound of Claim 1, comprising an azabicyclo[3.3.1] nonanyl or nonenyl moiety.

14. (Original) The compound of Claim 1, comprising an azabicyclo[3.2.1] octanyl or octenyl moiety.

15. (Original) The compound of Claim 1, having a structure as in Formula 2, wherein the carbon at which the azabicyclic ring is attached to the Ar moiety has R stereochemistry.

16. (Original) The compound of Claim 1, having a structure as in Formula 2, wherein the carbon at which the azabicyclic ring is attached to the Ar moiety has S stereochemistry.

17. (Currently Amended) A compound selected from the group consisting of:



wherein:

Zj refers to j number of Z substituents, which substituents can be present at any carbon atom on the azabicyclic ring,

j is 0, 1 or 2,

each Z is, individually, a substituent species selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl (including heteroaryl), substituted aryl (including heteroaryl), alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo (e.g., F, Cl, Br, or I), -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, -C(=O)NR'R", -NR'C(=O) R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC(=O)R'$, $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl (e.g., straight chain or branched alkyl including C_1-C_8, preferably C_1-C_5, such as methyl, ethyl, or isopropyl), cycloalkyl, heterocyclyl, aryl, or arylalkyl (such as benzyl), and r is an integer from 1 to 6,

R' and R" can combine to form a cyclic functionality,

the term "substituted" as applied to alkyl, aryl (including heteroaryl), cycloalkyl and the like refers to the substituents described above, starting with halo and ending with $-NR'SO_2R"$;

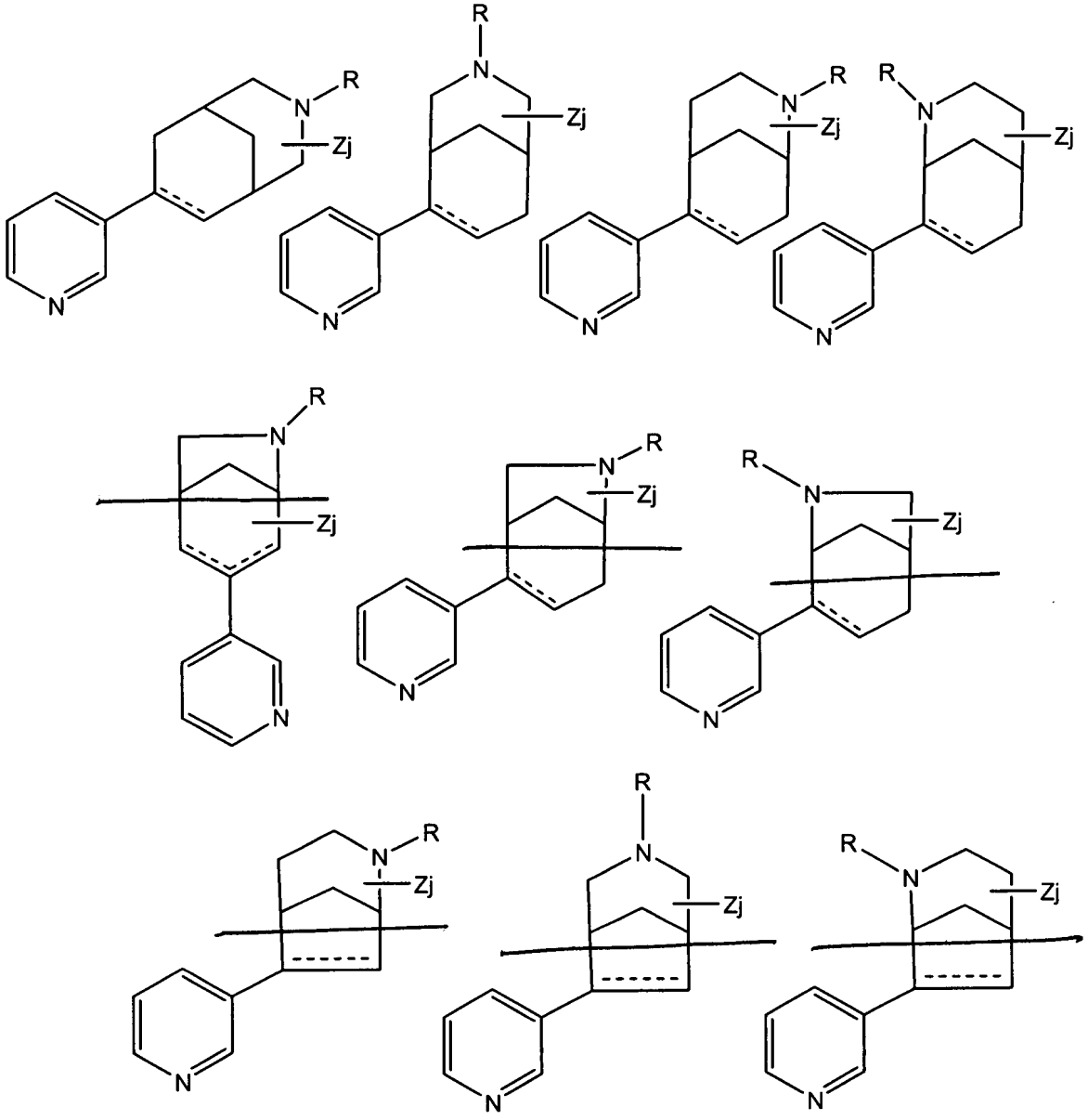
R is hydrogen, lower alkyl, arylalkyl (including heteroarylalkyl), acyl, alkoxycarbonyl or aryloxycarbonyl;

X' is N, or carbon bonded to H or a substituent Z,

the hashed bond indicates the presence or absence of a double bond, and

the compounds can exist as single stereoisomers or as mixtures of stereoisomers.

18. (Currently Amended) A compound selected from the group consisting of:



wherein:

Zj refers to j number of Z substituents, which substituents can be present at any carbon atom on the azabicyclic ring,

j is 0, 1 or 2,

each Z is, individually, a substituent species selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl (including heteroaryl), substituted aryl (including heteroaryl), alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo (e.g., F, Cl, Br, or I), -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, -C(=O)NR'R", -NR'C(=O) R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC(=O)R'$, $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl (e.g., straight chain or branched alkyl including C_1-C_8, preferably C_1-C_5, such as methyl, ethyl, or isopropyl), cycloalkyl, heterocyclyl, aryl, or arylalkyl (such as benzyl), and r is an integer from 1 to 6,

R' and R" can combine to form a cyclic functionality,

the term "substituted" as applied to alkyl, aryl (including heteroaryl), cycloalkyl and the like refers to the substituents described above, starting with halo and ending with $-NR'SO_2R"$;

R is hydrogen, lower alkyl, arylalkyl (including heteroarylalkyl), acyl, alkoxycarbonyl or aryloxycarbonyl;

the hashed bond indicates the presence or absence of a double bond, and

the compounds can exist as individual stereoisomers or mixtures of stereoisomers.

19. (Withdrawn) A method of treating a central nervous system disorder comprising the administration to a subject an effective amount of a compound of claim 1.

Claims 20-21. (Cancelled)

22. (Withdrawn) The method of Claim 19, wherein in the compound of claim 1, Ar is 3-pyridinyl.

Claims 23-28. (Cancelled)

29. (Withdrawn) The method of Claim 19, wherein in the compound of claim 1, j is 0 or 1.

30. (Withdrawn) The method of Claim 19, wherein in the compound of claim 1, j is 0.

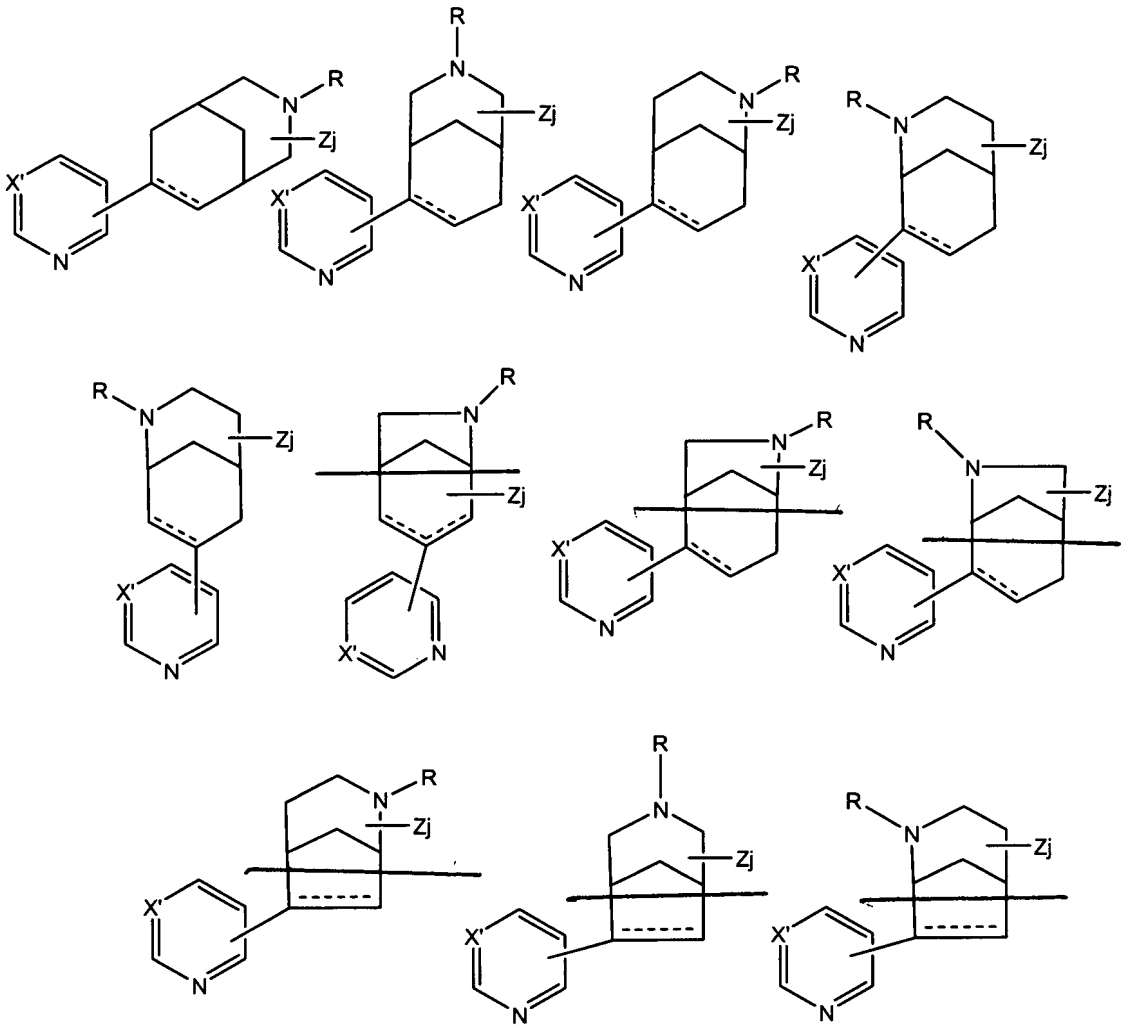
31. (Withdrawn) The method of Claim 19, wherein the compound of claim 1 comprises an azabicyclo[3.3.1] nonanyl or nonenyl moiety.

Claim 32. (Cancelled)

33. (Withdrawn) The method of Claim 19, wherein the compound of claim 1 is of Formula 2, and the carbon at which the azabicyclic ring is attached to the Ar moiety has R stereochemistry.

34. (Withdrawn) The method of Claim 19, wherein the compound of claim 1 is of Formula 2, and the carbon at which the azabicyclic ring is attached to the Ar moiety has S stereochemistry.

35. (Currently Amended and Withdrawn) The method of Claim 19, wherein the compound is selected from:



wherein:

Zj refers to j number of Z substituents, which substituents can be present at any carbon atom on the azabicyclic ring,

j is 0, 1 or 2,

each Z is, individually, a substituent species selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl (including heteroaryl), substituted aryl (including heteroaryl), alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo (e.g., F, Cl, Br, or I), -OR', -

NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, -C(=O)NR'R", -NR'C(=O) R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC(=O)R'$, $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl (e.g., straight chain or branched alkyl including C_1-C_8, preferably C_1-C_5, such as methyl, ethyl, or isopropyl), cycloalkyl, heterocyclyl, aryl, or arylalkyl (such as benzyl), and r is an integer from 1 to 6,

R' and R" can combine to form a cyclic functionality,

the term "substituted" as applied to alkyl, aryl (including heteroaryl), cycloalkyl and the like refers to the substituents described above, starting with halo and ending with $-NR'SO_2R"$;

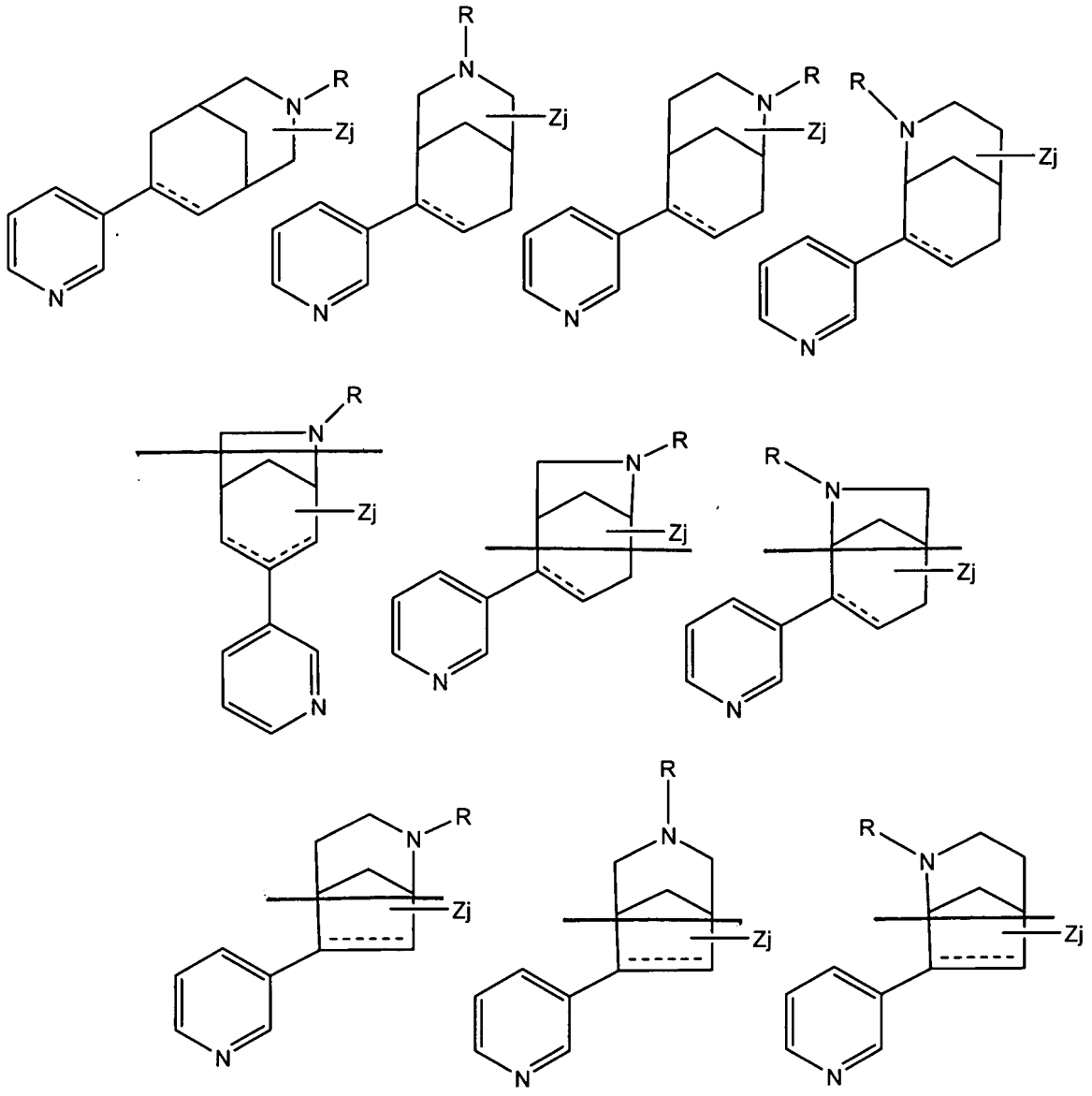
R is hydrogen, lower alkyl, arylalkyl (including heteroarylalkyl), acyl, alkoxycarbonyl or aryloxycarbonyl,

X' is N, or carbon bonded to H or a substituent Z,

the hashed bond indicates the presence or absence of a double bond, and

the compounds can exist as single stereoisomers or as mixtures of stereoisomers.

36. (Currently Amended and Withdrawn) The method of Claim 19, wherein the compound is selected from:



wherein

Zj refers to j number of Z substituents, which substituents can be present at any carbon atom on the azabicyclic ring,

j is 0, 1 or 2,

each Z is, individually, a substituent species selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl,

substituted cycloalkyl, aryl (including heteroaryl), substituted aryl (including heteroaryl), alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo (e.g., F, Cl, Br, or I), -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, -C(=O)NR'R", -NR'C(=O) R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC(=O)R'$, $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl (e.g., straight chain or branched alkyl including C_1-C_8, preferably C_1-C_5, such as methyl, ethyl, or isopropyl), cycloalkyl, heterocyclyl, aryl, or arylalkyl (such as benzyl), and r is an integer from 1 to 6,

R' and R" can combine to form a cyclic functionality,

the term "substituted" as applied to alkyl, aryl (including heteroaryl), cycloalkyl and the like refers to the substituents described above, starting with halo and ending with $-NR'SO_2R"$;

R is hydrogen, lower alkyl, arylalkyl (including heteroarylalkyl), acyl, alkoxycarbonyl or aryloxycarbonyl;

the hashed bond indicates the presence or absence of a double bond, and

the compounds can exist as individual stereoisomers or as mixtures of stereoisomers.

37. (Withdrawn) The method of claim 19, wherein the central nervous system disorder is selected from the group consisting of pre-senile dementia (early-onset Alzheimer's disease), senile dementia (dementia of the Alzheimer's type), micro-infarct dementia, AIDS-related dementia, Creutzfeld-Jakob disease, Pick's disease, Parkinsonism including Parkinson's disease, Lewy body dementia, progressive supranuclear palsy, Huntington's chorea, tardive dyskinesia, hyperkinesia, mania, attention deficit disorder, anxiety, dyslexia, schizophrenia, depression, obsessive-compulsive disorders and Tourette's syndrome.

38. (Withdrawn) A method for treating pain, preventing tissue damage, providing neuroprotection, and/or controlling angiogenesis, comprising the administration of an effective amount of a compound of Claim 1 to a patient in need of treatment thereof.

39. (Withdrawn) The method of claim 38, wherein the pain is selected from the group consisting of acute pain, persistent pain, neuropathic pain, neurologic pain, chronic pain, and inflammatory pain.

40. (Withdrawn) The method of claim 38, wherein the pain results from an autoimmune disorder, a bacterial or viral infection, a metabolic disorder, a tumor (benign or cancerous), a disease or condition of the circulatory system, organ malfunction, or trauma.

Claims 41-42. (Cancelled)

43. (Withdrawn) The method of Claim 38, wherein in the compound of claim 1, Ar is 3-pyridinyl.

Claims 44-49 (Cancelled).

50. (Withdrawn) The method of Claim 38, wherein in the compound of claim 1, j is 0 or 1.

51. (Withdrawn) The method of Claim 38, wherein in the compound of claim 1, j is 0.

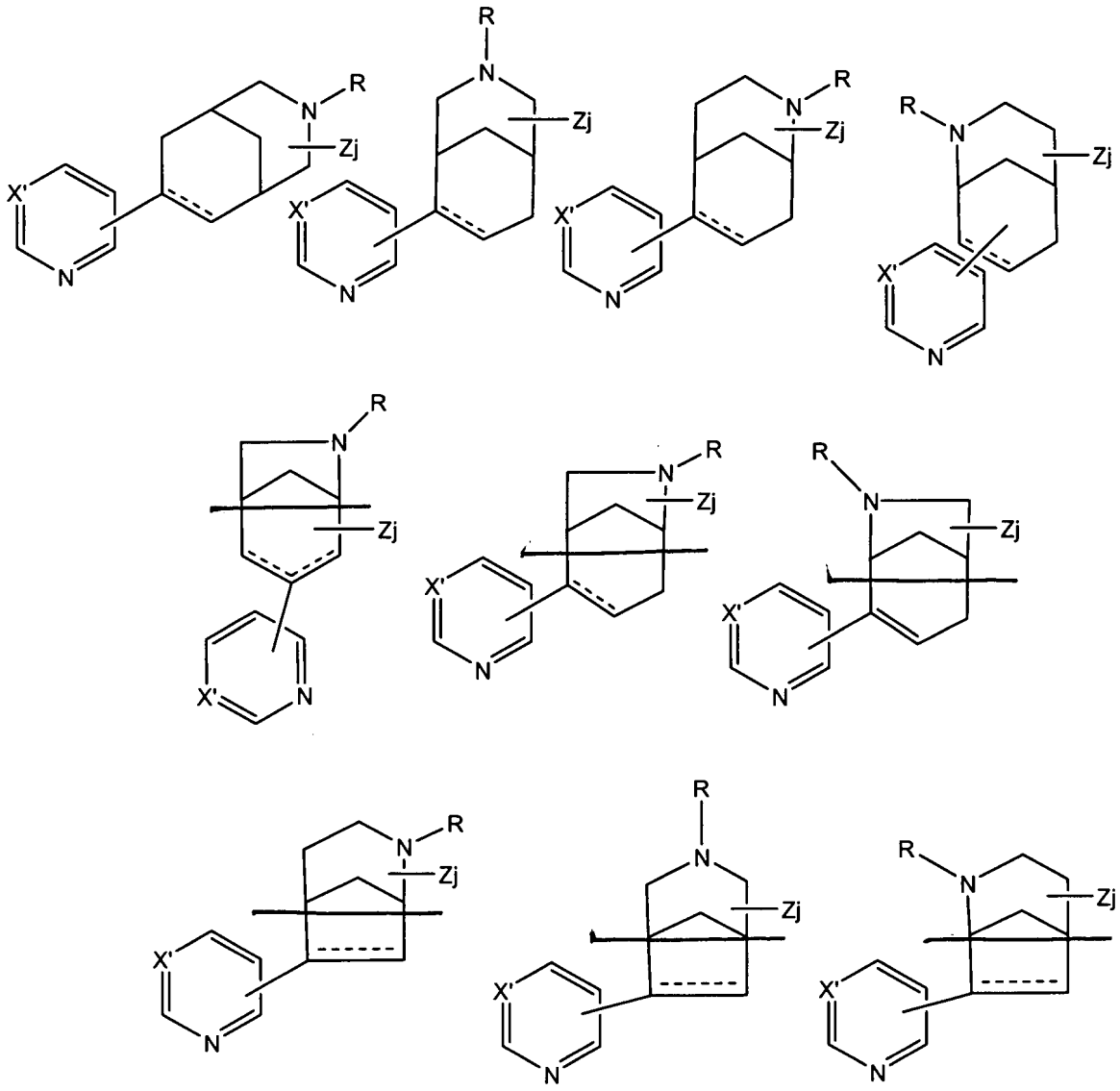
52. (Withdrawn) The method of Claim 38, wherein the compound of claim 1 comprises an azabicyclo[3.3.1] nonanyl or nonenyl moiety.

Claim 53. (Cancelled)

54. (Withdrawn) The method of Claim 38, wherein the compound of claim 1 is of Formula 2, and the carbon at which the azabicyclic ring is attached to the Ar moiety has R stereochemistry.

55. (Withdrawn) The method of Claim 38, wherein the compound of claim 1 is of Formula 2, and the carbon at which the azabicyclic ring is attached to the Ar moiety has S stereochemistry.

56. (Currently Amended and Withdrawn) The method of Claim 38, wherein the compound is selected from:



wherein:

Zj refers to j number of Z substituents, which substituents can be present at any carbon atom on the bicyclic ring,

j is 0, 1, or 2,

each Z is, individually, a substituent species selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl,

substituted cycloalkyl, aryl (including heteroaryl), substituted aryl (including heteroaryl), alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo (e.g., F, Cl, Br, or I), -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, -C(=O)NR'R", -NR'C(=O) R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC(=O)R'$, $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl (e.g., straight chain or branched alkyl including C_1-C_8, preferably C_1-C_5, such as methyl, ethyl, or isopropyl), cycloalkyl, heterocyclyl, aryl, or arylalkyl (such as benzyl), and r is an integer from 1 to 6,

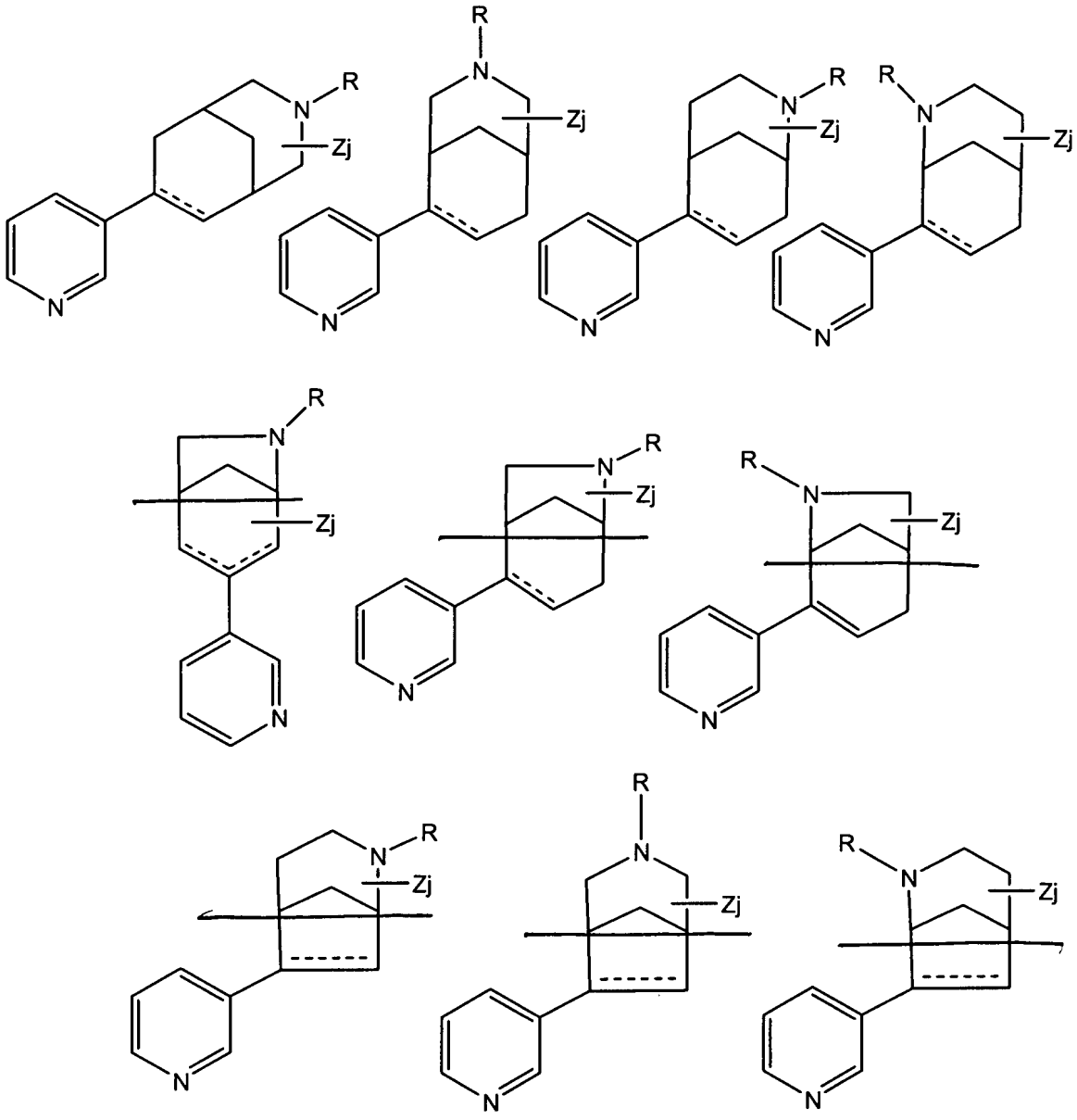
R is hydrogen, lower alkyl, arylalkyl (including heteroarylalkyl), acyl, alkoxycarbonyl or aryloxycarbonyl;

X' is N, or carbon bonded to H or a substituent Z,

the hashed bond indicates the presence or absence of a double bond, and

the compounds can exist as single stereoisomers or as mixtures of stereoisomers.

57. (Currently Amended and Withdrawn) The method of Claim 38, wherein the compound is selected from:



wherein

Zj refers to j number of Z substituents, which substituents can be present at any carbon atom on the azabicyclic ring,

j is 0, 1 or 2,

each Z is, individually, a substituent species selected from the group consisting of alkyl, substituted alkyl, alkenyl, substituted alkenyl, heterocyclyl, substituted heterocyclyl, cycloalkyl, substituted cycloalkyl, aryl (including heteroaryl), substituted aryl (including heteroaryl), alkylaryl, substituted alkylaryl, arylalkyl, substituted arylalkyl, halo (e.g., F, Cl, Br, or I), -OR', -NR'R", $-CF_3$, -CN, $-NO_2$, $-C_2R'$, -SR', $-N_3$, -C(=O)NR'R", -NR'C(=O) R", -C(=O)R', -C(=O)OR', -OC(=O)R', $-O(CR'R")_rC(=O)R'$, $-O(CR'R")_rNR"C(=O)R'$, $-O(CR'R")_rNR"SO_2R'$, -OC(=O)NR'R", -NR'C(=O)O R", $-SO_2R'$, $-SO_2NR'R"$, and $-NR'SO_2R"$, where R' and R" are individually hydrogen, lower alkyl (e.g., straight chain or branched alkyl including C_1-C_8, preferably C_1-C_5, such as methyl, ethyl, or isopropyl), cycloalkyl, heterocyclyl, aryl, or arylalkyl (such as benzyl), and r is an integer from 1 to 6,

R' and R" can combine to form a cyclic functionality,

the term "substituted" as applied to alkyl, aryl (including heteroaryl), cycloalkyl and the like refers to the substituents described above, starting with halo and ending with $-NR'SO_2R"$;

R is hydrogen, lower alkyl, arylalkyl (including heteroarylalkyl), acyl, alkoxycarbonyl or aryloxycarbonyl;

the hashed bond indicates the presence or absence of a double bond, and

the compounds can exist as individual stereoisomers or mixtures of stereoisomers.

58. (Withdrawn) A method for decreasing inflammation, comprising administering an effective amount of a compound of claim 1.

59. (Withdrawn) The method of claim 58, wherein the inflammation is mediated by cytokine release.

60. (Withdrawn) The method of claim 59, wherein the inflammation results from a bacterial infection.

61. (Withdrawn) The method of claim 60, wherein the bacterial infection has caused sepsis.

62. (Withdrawn) The method of claim 58, further comprising the co-administration of an antibiotic and/or an antitoxin.

63. (Withdrawn) A method for inhibiting angiogenesis associated with tumor growth, comprising administering an effective amount of a compound of claim 1 to inhibit neovascularization to a patient suffering from tumor growth.

64. (Withdrawn) The method of claim 63, further comprising the co-administration of an antineoplastic agent and/or a VEGF-inhibitor.

65. (Withdrawn) The method of claim 63, wherein the compound is administered locally to a growing tumor or to a capillary bed surrounding a growing tumor.

66. (Withdrawn) A method for inhibiting angiogenesis associated with tumor growth, comprising administering an effective amount of a compound of claim 17 to inhibit neovascularization to a patient suffering from tumor growth.

67. (Withdrawn) The method of claim 66, further comprising the co-administration of an antineoplastic agent and/or a VEGF-inhibitor.

68. (Withdrawn) The method of claim 66, wherein the compound is administered locally to a growing tumor or to a capillary bed surrounding a growing tumor.

69. (Withdrawn) A method for treating ischemia, comprising administering an effective amount of a compound of claim 1 to enhance vascularization of ischemic tissue.

70. (Original claim) A pharmaceutical composition comprising:

a) a compound of Claim 1,

b) an antineoplastic agent and/or a VEGF-inhibitor, and

c) a pharmaceutically acceptable carrier.

71. (Withdrawn) A method for inhibiting α7 mediated cytokine release comprising administering a compound of Claim 1 to a patient in need of normalization of cytokine levels.

72. Withdrawn) A method for treating drug addiction, nicotine addiction, and/or obesity, comprising administering an effective amount of a compound of Claim 1 to a patient in need of treatment thereof.